

Application No. 09/461,010

2

Attorney Docket No. T3264-906313

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-19. (Canceled)

20. (Currently Amended) A process for creating and managing pairs of asymmetrical cryptographic keys and associated certificates, each pair of asymmetrical cryptographic keys being intended for a user managed by a computer system, comprising:

searching in storage means for at least one user ~~one or more attributes, the attributes specifying one or more users~~ for which a pair of asymmetric keys and an associated certificate must be created, each user associated with a status associated with an attribute wherein each attribute is capable of having any one of the following values: can at least ~~have the value of~~ pending, in progress, process ended with an error message, process done, sending a creation~~certification~~ request and done;

creating, based on the one or more attributes, at least one first individual creation and certification request for a pair of asymmetric keys for said user;

transmitting a key generation request corresponding to said first individual creation and certification request to a key generating center, which issues a pair of asymmetric keys in accordance with said key generation request;

creating a public key for said user,

creating at least one second individual certification request for public key created for said user; and

#9296025.1

Application No. 09/461,010

3

Attorney Docket No. T3264-906313

transmitting a certification authority request corresponding to said second individual certification request to a certification authority and issuing a first certificate in accordance with said certification authority request.

21. (Previously Presented) A process according to claim 20, further comprising creating the pair of keys for a given user when said user lacks the pair of keys and the corresponding first individual creation and certification request.

22. (Original) A process according to claim 20, further comprising executing said process periodically.

23. (Previously Presented) A process according to claim 20, wherein the first individual creation and certification request and the second individual certification request are created from corresponding multiple creation and certification requests stored in the storage means relative to a set of users belonging to a preset list or to a set of users defined by predetermined criteria, as well as to model pairs of keys and associated model certificates for the set in question.

24. (Previously Presented) A process according to claim 21, wherein the first individual creation and certification request and the second individual certification request are created from corresponding multiple creation and certification requests stored in the storage means relative to a set of users belonging to a preset list or to a set of users defined by predetermined criteria, as well as to model pairs of keys and associated model certificates for the set in question.

#9296025.1

Application No. 09/461,010

4

Attorney Docket No. T3264-906313

25. (Previously Presented) A process according to claim 22, wherein the first individual creation and certification request and the second individual certification request are created from corresponding multiple creation and certification requests stored in the storage means relative to a set of users belonging to a preset list or to a set of users defined by predetermined criteria, as well as to model pairs of keys and associated model certificates for the set in question.

26. (Previously Presented) A process according to claim 23, further comprising searching in each of the multiple creation and certification requests for all of the users in a condition such that a pair of keys must be created.

27. (Previously Presented) A process according to claim 24, further comprising searching in each of the multiple creation and certification requests for all of the users in a condition such that a pair of keys must be created.

28. (Previously Presented) A process according to claim 25, further comprising searching in each of the multiple creation and certification requests for all of the users in a condition such that a pair of keys must be created.

29. (Currently Amended) A process for creating and managing certificates for pairs of asymmetrical cryptographic keys, each certificate being intended for a pair of asymmetrical cryptographic keys for a user managed by a computer system, comprising:
searching in storage means for ~~one or more attributes, the attributes associated with~~
~~one or more users~~ at least one user for which a certificate must be created, each user
associated with a status associated with an attribute wherein each attribute is capable of

#9296025.1

Application No. 09/461,010

5

Attorney Docket No. T3264-906313

having any one of the following values: ~~can at least have the value of pending, in progress,~~
process ended with an error message, process done, sending a creation~~certification~~ request
and done;

creating, based on the one or more attributes, at least one individual certification
request for certifying a public key; and

transmitting a certification authority request corresponding to said individual
certification request to a certification authority and issuing a first certificate in accordance
with said certification authority request.

30. (Previously Presented) A process according to claim 29, further comprising
creating the certificate for a given user when said user lacks the certificate and the
individual certification request.

31. (Previously Presented) A process according to claim 29, further comprising
executing said process periodically.

32. (Previously Presented) A process according to claim 30, further comprising
executing said process periodically.

33. (Previously Presented) A process according to claim 30, further comprising
creating the certificate for a given user when the certificate expires.

34. (Previously Presented) A process according to claim 31, further comprising
creating a new certificate for a given user when the first certificate expires.

#9296025.1

Application No. 09/461,010

6

Attorney Docket No. T3264-906313

35. (Previously Presented) A process according to claim 32, further comprising creating a new certificate for a given user when the first certificate expires.

36. (Previously Presented) A process according to claim 29, further comprising creating each individual request from a corresponding multiple certification request recorded in the storage means relative to a set of pairs of keys for users belonging to a preset list or to a set of pairs of keys for users defined by predetermined criteria, as well as to associated model certificates for the set in question.

37. (Previously Presented) A process according to claim 30, further comprising creating each individual request from a corresponding multiple certification request recorded in the storage means relative to a set of pairs of keys for users belonging to a preset list or to a set of pairs of keys for users defined by predetermined criteria, as well as to associated model certificates for the set in question.

38. (Previously Presented) A process according to claim 31, further comprising creating each individual request from a corresponding multiple certification request recorded in the storage means relative to a set of pairs of keys for users belonging to a preset list or to a set of pairs of keys for users defined by predetermined criteria, as well as to associated model certificates for the set in question.

39. (Previously Presented) A process according to claim 33, further comprising creating each individual request from a corresponding multiple certification request recorded in the storage means relative to a set of pairs of keys for users belonging to a

#9296025.1

Application No. 09/461,010

7

Attorney Docket No. T3264-906313

preset list or to a set of pairs of keys for users defined by predetermined criteria, as well as to associated model certificates for the set in question.

40. (Previously Presented) A process according to claim 36, further comprising searching in each of the multiple certification requests of the system for all of the users in a condition such that a certificate must be created.

41. (Previously Presented) A process according to claim 37, further comprising searching in each of the multiple certification requests of the system for all of the users in a condition such that a certificate must be created.

42. (Previously Presented) A process according to claim 38, further comprising searching in each of the multiple certification requests of the system for all of the users in a condition such that a certificate must be created.

43. (Previously Presented) A process according to claim 39, further comprising searching in each of the multiple certification requests of the system for all of the users in a condition such that a certificate must be created.

44. (Previously Presented) A process according to claim 20, wherein each multiple request comprises an attribute relative to at least one execution date and in that said process comprises including in the search only the multiple requests whose expiration date has arrived.

#9296025.1

Application No. 09/461,010

8

Attorney Docket No. T3264-906313

45. (Previously Presented) A process according to claim 20, further comprising performing encoding of one or more extensions in accordance with one or more given rules and entering the encoded extension or extensions into the individual certification request during the creation of said individual certification request.

46. (Previously Presented) A process according to claim 20, further comprising changing a value of the attribute contained in each of the individual first and second requests to indicate status of the process.

47. (Currently Amended) A computer system for creating and managing pairs of asymmetrical cryptographic keys and certificates associated with the pairs of keys, the pairs of keys and the certificates being intended for users managed by said system, comprising:

a key generating center for creating at least one pair of keys at the request of a local registration authority with which the key generating center communicates;

at least one certification authority to which the system has access for creating a certificate at the request of the local registration authority; and

means for automating, based on one or more attributes associated with one or more users, the creation and/or certification of at least one pair of keys for each user managed by the system, wherein each attribute is capable of having any one of the following values: can
~~at least have the value of pending, in progress, process ended with an error message,~~
process done, sending a creation~~certification~~ request and done.

48. (Previously Presented) A computer system according to claim 47, further comprising:

#9296025.1

Application No. 09/461,010

9

Attorney Docket No. T3264-906313

a central management service for creating, updating and consulting objects and users managed by said system;

a local registration authority for handling the creation and/or the certification of keys intended for the objects and the users;

a central security base containing the users and the objects managed by the system with which the local registration authority communicates;

a key generating center for creating at least one pair of keys at the request of the local registration authority with which the key generating center communicates; and

at least one certification authority to which the system has access for creating a certificate at the request of the local registration authority.

49. (Previously Presented) A computer system according to claim 47, further comprising a wake up mechanism periodically waking up the local registration authority.

50. (Previously Presented) A computer system according to claim 48, further comprising a wake up mechanism periodically waking up the local registration authority.

51. (Currently Amended) A process for creating and managing symmetrical cryptographic keys, wherein a symmetrical cryptographic key can be used to both encode and decode data, and wherein each key is intended for a user managed by a computer system comprising:

searching in storage means for ~~one or more attributes, the attributes specifying one or more users~~ at least one user for which a symmetric key must be created, each user associated with a status associated with an attribute wherein each attribute is capable of having any one of the following values: can at least have the value of pending, in progress,

#9296025.1

Application No. 09/461,010

10

Attorney Docket No. T3264-906313

process ended with an error message, process done, sending a creation certification request and done;

creating, based on the one or more attributes, at least one individual request for creating a symmetric key for said user;

transmitting a key generating request corresponding to said individual creation request to a key generating center, and

issuing by said key generating center a symmetric key in accordance with said transmitted key generating request.

52. (Currently Amended) A computer system for creating symmetrical cryptographic keys, wherein a symmetrical cryptographic key can be used to both encode and decode data, and wherein said system manages users, comprising:

a key generating center for creating at least one pair of keys at the request of the local registration authority with which the key generating center communicates;

at least one certification authority to which the system has access for creating a certificate at the request of the local registration authority; and

means for automating, based on one or more attributes associated with one or more users, the creation of at least one key for each user managed by the system, wherein each attribute is capable of having any one of the following values: ~~can at least have the value of~~ pending, in progress, process ended with an error message, process done, sending a certification request and done.

53. (Previously Presented) A process according to claim 20, further comprising creating a pair of keys for a given user when a certificate issued in response to a

#9296025.1

Application No. 09/461,010

11

Attorney Docket No. T3264-906313

certification authority request for a pair of keys for said user intended for an identical use has been revoked and a new pair of keys has been requested.

54. (Previously Presented) A process according to claim 29, further comprising creating a pair of keys for a given user when a certificate issued in response to a certification authority request for a pair of keys for said user intended for an identical use has been revoked and a new pair of keys has been requested.

55. (Previously Presented) The process of claim 20, further comprising periodically activating a local registration authority to perform the searching step.

56. (Previously Presented) The process of claim 55, wherein an activation period is modifiable.

#9296025.1